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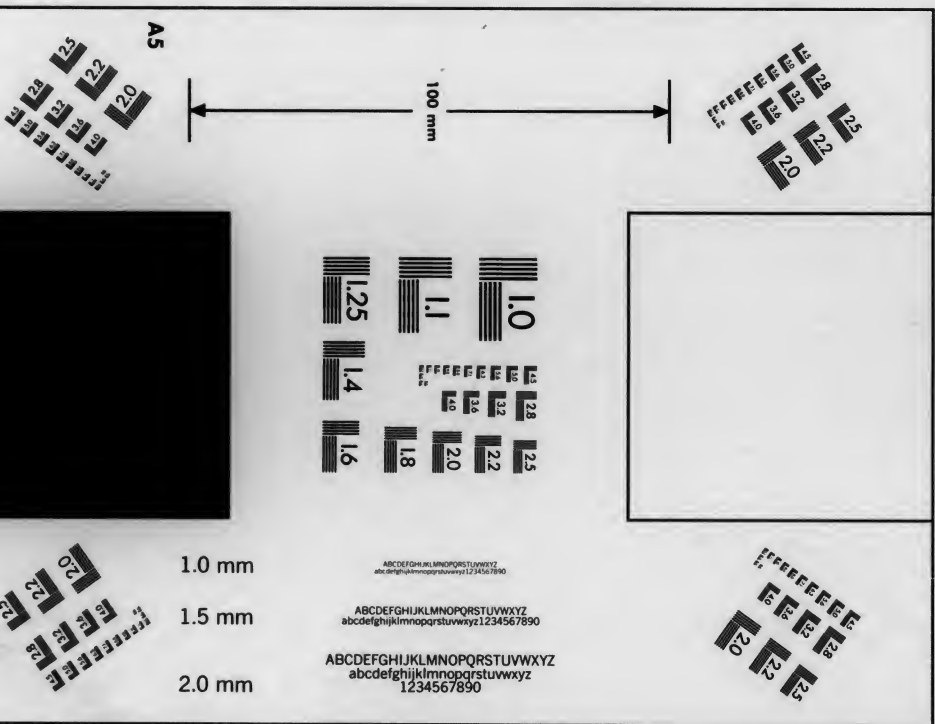
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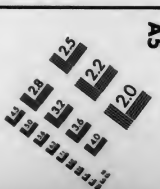
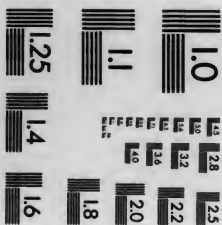
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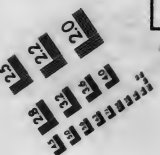
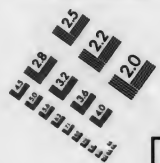
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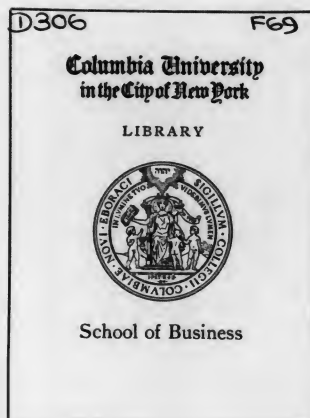
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U.S. Agricultural Economics Bur.
Almond Industry in Italy & Spain

Foley



UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Agricultural Economics

Report F. S. 22.

November 1, 1922.

THE ALMOND INDUSTRY IN ITALY AND SPAIN

By

Edw. A. Foley
Agricultural Commissioner
U. S. Department of Agriculture
London, England

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THE ALMOND INDUSTRY OF ITALY AND SPAIN.

Introduction.

The growing of almonds in the countries of the Mediterranean Basin dates back to pre-historic times. They are grown in all of the Mediterranean countries as far north as latitude 45° , but chiefly along the east coast of Italy in and about Foggia and Bari, along the east and south coast of Spain and from Barcelona to Malaga, and particularly in the Islands of Sicily, Majorca and Iviza.

It will be noted that the statistics in this report for both Italy and Spain are given as shelled and unshelled almonds. Unshelled almonds are often of the soft shelled variety such as the paper shelled varieties of the Island of Iviza, the smallest and westernmost of the three principal Balearic Islands, belonging to Spain, in the Mediterranean, a little more than 150 miles southwest of Barcelona. These almonds grow only under the most favorable conditions such as are found in that island, in France, and in a few other places on the mainland. The shelled almonds are usually bleached and sold in the grocery and similar trade. This shelling is done in some places by speculators who buy unshelled almonds and shell, and in some cases also grade the almonds. In other places, especially in Majorca, the largest of the Balearic Islands, and southern Spain, the almonds are shelled by the peasants during their leisure moments.

THE ALMOND INDUSTRY IN ITALY.

The most important source of almond supply in Italy is to be found along the central and south eastern coast line in the vicinity of Bari. The Bari supply on the southeast coast of Italy comes from one of the most backward sections of that country. It is important to note that this section of Italy, where illiteracy is still most prevalent, was particularly oppressed during the reign of the Bourbon Kings, and it has only been in recent times that much progress has been made. At the present time and under the present King of Italy, a very complete study of almond growing is being made both in and about Bari and in Sicily. It is as yet too early to expect any definite results from these labors in the increased production of that section.

The cultivation of almonds in Italy has been gradually increasing year by year so that now it is second in importance only to the cultivation of citrus fruit. In the Bari and Sicily districts it exceeds citrus growing in importance. The total annual production of shelled almonds in Italy at the present time is about 99,207,000 pounds. The compilation of agricultural statistics in Italy during recent years has been disorganized on account of the war. According to the bulletin of the Periodical News of the Office of Agricultural Statistics of Italy, however, the production in the shell for the years 1915, 1916 and 1920 amounted to 140,212,560 pounds, 246,453,420 pounds and 303,352,960 pounds, respectively. The export figures of the Italian Government for the ten year average, prior to 1916, indicate that the home consumption of almonds in Italy was 50% of the national production.

THE BARI ALMOND SECTION.

One of the most important almond growing sections of Italy is that which lies back of the port of Bari. The Bari almond region is a low-lying district along the southeastern coast line and runs up along the mountain side a few miles back from the Adriatic. The soil is of rocky limestones and is well adapted to almond cultivation. The climate, while generally uniform, is subject during certain years to severe changes due to frosts, which fact very materially lowers the output of almonds in that region. This is evident from a study of the production figures of the Bari district from the years 1907 to 1917. Some years the production is given as 155,731,200 pounds, while other years it is as low as 11,904,840 pounds in the shell. The area devoted to almonds in the Bari section of Italy from 1903 to 1916, according to the Bari Department of Agriculture, was as follows:

Year	:	Acres
1903	:	402,699
1910	:	431,120
1915	:	476,903
1916	:	515,179

The acreage in almonds is very difficult to ascertain in this district as many of the almond orchards are mixed with olives and the trees are by no means uniform in their position. For that reason there is very little to be gained by an accurate knowledge of the actual area. In the old orchards the trees seem to be planted almost at random. In the newer orchards, however, an attempt is being made to keep the trees

at a uniform distance where the ground is level, but very little of the ground unfortunately is level. The entire district has to be terraced in order to prevent the land from being washed away. This is particularly true of the mountainous district where sustaining walls 30 to 40 feet long and 3 to 5 feet high are built with stone to maintain 4 and 5 trees.

BARI ALMONDS CONSIDERED BEST IN ITALY.

Commercially the Italians consider that Bari has easily the best almonds in Italy. The commercial output in a good year is generally estimated at from 55,115,000 pounds to 66,138,000 pounds of shelled almonds. These almonds are both bitter and sweet. In prewar days the entire output of the Bari district was in German hands and was exported directly to Germany and the Central European countries - little or no attention being paid to grading. These markets are now closed so that the Bari merchants have directed their attention towards the markets in the United States.

The Bari market is perhaps the most disorganized of the European almond markets. In prewar days the total output of that section went directly to Germany, both the bitter almonds for industrial purposes and the sweet almonds for commercial purposes. The great call from Germany was for cheap almonds. Since there was no grading, everything was shipped, good, bad and indifferent. It is said that the product was loaded up with as much shell and moisture as the traffic would bear. When the war put an end to shipping, the Bari almonds were transported overland and sold through Naples and other Italian ports.

With the re-opening of trade, however, the merchants had to reorganize their methods of doing business. This process of reorganization is still taking place.

GRADING AND SHELLING OF BARI ALMONDS.

There is great demand for high class almonds in both the United States and in the United Kingdom. The almond growers of the Bari district intend to make every effort to develop a market for their product in those countries. The outstanding difficulty at the present time, however, is the fact that the Bari shippers are entirely unaccustomed to the high-class trade such as is being carried on by the American and British dealers with the Spanish almond growers. The Bari trade is accustomed to only one grade, "Premier Bari," which calls for a good average quality of the seasons and is sub-divided according to weight into three classes - heavy, medium and light.

This grading is carelessly performed by women who know little of the work they are handling. The shelling and grading is performed by hand, and the women who do the work receive 5 lira (at par 96 cts) per day. These women are not very energetic, though much cannot be expected considering their mental capacity, experience and pay. A really energetic worker can shell 165 pounds or more per day, but the general average is considerably below that figure. Almonds lose about two-thirds or three-quarters of the weight in the shelling process.

The following table shows weights of shell and kernel by varieties in the Bari district.

Varieties of Almonds.	Weight shell and kernel per bushel measure.		
	Shell.	Kernel.	Shell & Kernel.
	Pounds.	Pounds.	Pounds.
Occhio Rosso	33.16	10.38	43.55
Sciacaciatello	33.05	11.44	44.49
Sciacacolella	32.79	11.30	44.09
Magarella	32.71	11.09	43.80
Minco-Accetta	33.05	11.02	44.07
Montrone	34.04	11.30	45.34
Amara	35.31	10.31	45.63
Amara Coratina	29.30	11.30	41.10
Mollese	15.42	13.42	26.84
Mollese e Nocella	19.49	13.00	32.49

AMERICAN AND BRITISH DEMAND HIGHEST GRADE NUT.

With the coming of the high class trade of the United States and of the United Kingdom came a demand for a high grade product which could compete successfully with the Sicilian and Spanish almond. Considerable difficulty has been experienced in the development of this new trade as the Bari people are just commencing to grade. In spite of the fact that present methods under the leadership of the Bari Chamber of Commerce are very much disorganized, some progress is being made in grading.

Regulations for the control of the almond trade of the Bari district were first formulated by the Chamber of Commerce and Industry of that Province at a meeting held on July 24, 1912, although rules for the classification of almonds entering into the export trade of Bari were established as early as September 24, 1909. These regulations and rules, however, have now been changed. The change was brought about by

the Bari Chamber of Commerce which saw the necessity for the establishment of a better code of mercantile practice in the grading and marketing of almonds.

The following are the old and the new official gradings of the Bari Chamber of Commerce, together with the old and new arbitrary rules of that organization:

OLD EXPORT CLASSIFICATION.

1. Selected sweet almonds of Bari: not to be mistaken for hand selected - this means a type of almonds of the normal size for the year's crop, produced in the region of Apulia and its surroundings, (not including the regions that are notorious for producing small almonds, such as Fasans, etc.; the bulk of the almonds must not contain more than 10% of these sorts) containing from 1/2 to 1% of foreign matters, and not more, between rind and waste; and between 1/2 and 1%, and not more of natural moisture, due to recent breaking or to young fruit picked too soon.

2. Current sweet almonds: this means a type of fruit of the normal size for the year's crop produced in the region of Apulia and its surroundings, containing a larger percentage of small fruit, - i. e., up to 3% of broken fruit and waste when arriving at the market and up to 6% in fruit sent abroad; this takes into consideration the knocking about in the warehouses of the dealers and enroute; it may contain up to 25% of small fruit produced in the district of Fasano or other similar districts, or of small fruit remaining over from hand selected products. This current type of almonds must not contain over 3% of foreign matters, between rind (up to 1-1/2%) and moisture (up to 1-1/2%) at the most.

Any parcel of current sweet almonds of Bari, which shall contain a larger proportion of foreign matters than that indicated above shall be held to be adulterated. Hence the injured party shall have the right to take legal action against the vendor or consignor according to the civil laws against commercial fraud.

3. All sweet almonds sold under the name of the district of origin, such as: Bisceglie, Molfetta, Giovinazzo, Andria, Modugno, etc., must represent the good average type of the year's crop of local growth, and must contain a regular percentage of large fruit according to the district, from 15 to 30%, which must not have been previously impoverished by selecting by hand; this operation is strictly forbidden. The said almonds must be well dried, they must not contain more than 1/4% of rind, waste, etc.

4. Bitter almonds must not contain more than 5% of sweet fruit and must be grown in the districts of Apulia and its surroundings; they must be delivered well dried, no moisture except what is absolutely natural being allowed; the maximum of 1/4% of rind and waste must not be exceeded.

5. In estimating moisture, samples of 5 kgs. (11 pounds) are taken from the bulk of the fruit, either from one or from several sacks taken hap-hazard from the bulk; the weight of the said sample is registered; the sample almonds are then allowed to dry for a month in a dry, well aerated place, without exposing the fruit directly to the rays of the sun.

6. When the Chamber shall be asked for expert decisions in cases of commercial disputes, or for other reasons, it shall adhere to the above rules and judge the samples by the above standard, as becomes traders and brokers expert in the matter and endowed with a proper feeling of duty and justice.

Approved by the Chamber of Commerce and Industries of the Province of Bari, at the sitting of Sept. 24, 1909.

The Secretary
Bertolini

The President
A. De Tullio

OLD REGULATIONS.

Board of Experts for expert estimates and arbitral awards in the almond trade.

Art. 1. The Chamber of Commerce and Industries of the Province of Bari has set up a Board of Experts, composed of one Councillor of the Chamber, one dealer in the goods of that market and one licensed broker in goods, to be elected by the Chamber. The Councillor of the Chamber acts as President; the Board remains in office two years, subject to re-election. The Secretary of the Chamber of Commerce acts as Chancellor.

Art. 2. The Board shall deliver its conclusions in the form of certificates signed by its President to the Chancellor. In order to insure the better working of this Institution, the Chamber shall provide for the nomination of two Councillors, two dealers and two brokers who shall work in turn, one replacing the other in time of need. If there be any extraordinary demand for sample taking, the President will be empowered to avail himself of the services of the whole Board at the same time.

Art. 3. This Board will settle all commercial controversies con-

cerning almonds: it will give awards based on the rules of the official classification agreed upon by the Chamber.

Art. 4. In case of a request for expert awards the samples shall be taken from the bulk of the goods in the manner which the President of the Board shall consider suitable. The President of the Board shall empower special agents to collect samples in the districts of the provinces; this collection shall be carried out according to prescribed rules and shall be gratuitous.

Art. 5. The sample must weigh between 3 and 5 kgs. (6-1/2 and 11 pounds) and shall remain in the custody of the Chamber of Commerce until the arbitral award shall have been given, after which the sample shall be returned to the owner.

Art. 6. When the request for expert award comes from abroad, the sample, which must be of 3 to 5 kgs. (6-1/2 to 11 pounds), must be sent carefully packed to the Chamber of Commerce; the Board, however, gives no guarantee as regards the taking of the sample; it is the business of the parties concerned to take precautions in this matter.

Art. 7. The Board has the right to avail itself of the services of other technicians chosen by itself, either for taking samples or for giving expert awards; under these circumstances the technician takes the place of one of the judges whose honorarium he receives.

Art. 8. Anyone desiring expert award in cases of dispute must pay to the Secretariat of the Chamber of Commerce, in addition to registration dues, stamp dues, and the regular dues of the Chamber, the following sums in advance:

- 30 Italian lira for dues to the Board.
- 5 Italian lira for dues to the Chancellery.
- 2 Italian lira for copying.

Art. 9. Whoever desires an expert award only for the purpose of sending goods abroad need pay but half the above tariff.

Art. 10. The Board of Experts shall have jurisdiction over the whole province of Bari for dealings outside the Province and abroad, and for local transactions within the Province itself.

Approved by the Chamber of Commerce and Industry of the Province of Bari at the sitting of July 24, 1912.

The Secretary
Bertolini

The President
A. De Tullio

NEW REGULATIONS FOR THE BARI ALMOND TRADE.

Since 1909 (sitting of Sept. 24) our Chamber of Commerce, taking into consideration the great importance of the almond trade, with the unanimous assent of our exporters and understanding the wishes and needs of the foreign buyers, who were the chief purchasers of our valuable produce, with a view to the greater preservation of our rights and interests in said markets, has been formulating as 'classification of almonds for the trade of the Province.'

This code of mercantile practice, which was equally well received at home and abroad, was in 1912 (sitting of July 24) completed by the creation of a Board of Experts charged with applying the rules and settling all trade disputes concerning almonds. This Board has proven extremely useful and rendered signal service.

Time, which changes and destroys all things, has made necessary some changes in the classification of 1909. It is therefore necessary to adapt the written rules to changed conditions. This necessity does not arise solely from a change in our personnel or in our firms; the markets have also changed and their respective importance has altered.

Repeated requests have reached us from abroad regarding a better and more modern regulation of the almond trade and our exporters have joined in the request. A new and authoritative voice, that of the Banks, has made itself heard; these today have a large amount of capital interest in this trade.

Taking all this into consideration our office has compiled, in cooperation with a mixed commission of expert traders and Bank representatives, the following rules which the Council is invited to consider and sanction.

NEW EXPORT CLASSIFICATION.

1. First quality Bari almonds means a type of fruit of the normal size for the year's crop, grown in the district of Apulia, excluding the crops grown in the neighboring districts and especially the Abruzzi. The first quality Bari almonds may contain up to 2% of bitter almonds, not more than 1% of rind to 1% of natural moisture.

2. All sweet almonds sold under the name of their district of origin such as, "Andria," "Bisceglie," "Molfetta," "Giovinazzo," and "Modugno," etc., must represent the average type of the year's crop, not impoverished, of the respective local produce, they must be

free from bitter almonds; a maximum of 1% of rind to 1% of natural moisture is allowed. Bari bitter almonds must be grown in the district of Apulia and must not contain more than 5% of sweet fruit; a maximum of 1% of rind and 1% of natural moisture is allowed.

3. Many foreign consignments arrive at their destination with a loss of more than 1% above the 1% allowed, such loss being certified by the public weigher sack by sack on arrival of the goods. The Apulian exporter shall be held liable to make good the difference. Any loss which shall be found equal on all the sacks shall be considered a natural loss, therefore all losses due to theft or other cases of force majeure are excluded and must be recouped from insurance.

4. The foreign purchaser cannot refuse parcels of sweet almonds containing up to 2% of rind and moisture and up to 5% of bitter almonds but - whilst he is still held to his obligation to pay for the goods according to the contract made - he may demand an allowance from the seller where the goods do not come up to those specified by the bargain regularly ratified on both sides.

5. The same regulations apply to parcels of bitter almonds containing up to 2% of rind and moisture and up to 20% of sweet fruit. In cases where the above percentages shall be exceeded the buyer is not compelled to accept the goods and will be entitled to take consequent legal action against the seller, according to the laws on commercial fraud: in such case he must apply either to the Chamber of Commerce of Bari or to Italian tribunals.

6. In case of dispute the receiver must apply to the local Chamber of Commerce so that it may, with the least possible delay, take samples according to the following rules:

(a) in quantities of not over 50 sacks, one original sack from the goods complained of shall be taken; this shall be sent to the Chamber of Commerce of Bari; the vender must reimburse the value of such sack at the price in the contract;

(b) in quantities of less than 50 sacks, the sample shall be taken from a mixture of the different sacks forming the lot.

7. In places where there is no Chamber of Commerce, the receiver must request the intervention of someone delegated by the President of the nearest Chamber of Commerce who shall be fully authorized to carry out the undertaking and who shall take the samples according to the rules laid down in (a) and (b).

(Approved by the Chamber of Commerce and Industries of Bari on Feb. 4, 1921).

EDUCATION NEEDED FOR DEVELOPMENT OF GRADES.

Although the new system of grading has been officially promulgated it is by no means true that it is being followed even by a majority of the merchants. A great amount of educational work has to be done and it will be many years before grading in Italy is on the same level as the grading in southern Spain. It might be noted, however, that the superiority of the Spanish grading is due entirely to the German, other European and American houses operating in that country. There are no uniform types of almonds in the Bari production district because of the vast number of different trees. One finds seven or eight varieties of trees even on the smallest farms. The Bari Experimental Station (under Professor Dr. Enrico Pantanelli) has gathered samples from 200 varieties of trees in that Province alone and new varieties are continually being discovered.

At the present time there are almost as many grades as there are firms dealing with almonds. Almonds are sorted out according to the province from which they come and according to size - small, large flats, etc. There is a price range of about 300 lira per 100 kilos (26.3¢ per lb.) between the best and the poorest varieties. (Conversions on the basis of the par value of the lira) The trade is also very much disorganized by the opening since the war of innumerable new houses which have no financial standing or credit. These firms pick up lots through the country and sell them to the exporters or export them themselves.

The temptation to be careless in grading is, of course, very great. In prewar times Germany took the bitter almonds for industrial

purposes. There is now absolutely no market for these bitters. Germany took everything - good, bad and indifferent, but now that the United States and the United Kingdom are calling for nothing but the best grade of almonds, there is no outlet for the bad, broken and inferior nuts. There are, therefore, a dead loss unless they can be loaded into graded stock. Older firms, however, are working hard to put the business of Bari on a firm footing and to introduce grading that will compare with the best Spanish systems. These older firms, unfortunately, are in the minority and great care must be exercised by all Americans dealing in that section of the country.

PRICE QUOTING TO BE PLACED ON A BUSINESS BASIS.

There is now a movement on foot throughout the Province of Bari to establish a Chamber of Exporters and to put the question of prices and quotations on a more businesslike basis. Reports on the condition of the crops and general prices are now issued monthly by the Bari Chamber of Commerce. This monthly report is being received regularly by the Bureau of Agricultural Economics. The American trade in Bari is calling for a long smooth skinned almond, running 40 to the ounce, excluding twins, broken, etc. There is also a call for similar almonds of fine quality for confectionery use - these are called Petites Tries. The larger and cheaper demand is for the grinding almond which includes, of course, broken and twins. It should be noted that quite a number of orders for grinding almonds placed in Spain are filled from the Bari crop by merchants in Spain and Sicily, who getting orders from the United States and other countries, fill them from the

Bari stock.

It can safely be said that while the production is not all that could be desired and its distribution is entirely or largely in incompetent hands, the Bari market is going to be a source of severe competition in the very near future. The quality of the almonds in that region is high and there is money to be made in their distribution. The Italians through their Chamber of Commerce and a few prominent houses are making a very determined effort to control the marketing of this product and to improve the grading. The Italian dealers realize that if they do not do this themselves, German, English and American houses who have already taken charge of the distribution of the Spanish output, will also establish themselves in Italy unless the Italians make the best of the opportunities which they now have before them. There will also be an improvement in the quality of the almonds. The Department of Agriculture is working with the peasants and there is every reason to expect a real but slow improvement in methods of farming. At present everything is very primitive. The use of farm machinery is, of course, out of the question owing to the general conformation of the land.

Even the grain in this region is threshed by driving mules and horses over it on a threshing floor. Most of the cultivation is done by hand. Pruning of trees is said to be a great art handed down from father to son. The truth is that tree pruning is an art, but the Italian peasants do not know a great deal about it - as one scientific agriculturist said - when a tree gets too big they just go out and chop off some of the branches. There is very little fertilizer

used in that section. The use of sprays is confined almost entirely to certain large estates which are scientifically farmed by graduates of the various agricultural schools, especially at Portici where Professor Gaetano Briganti has done notable work.

The prewar cost of planting and maintaining one hectare (2.471 acres) of almonds in the Bari district, during the first year of cultivation, according to the calculations of Professor Luigi Vivarelli, the Director of the Agricultural School at Andria, and of Dott. Michele Marchio, a landowner and agriculturist, was as follows:

	:Dollars (a)
1. Preparation of the soil; for plants at a distance from each other of 13 meters in all directions: 70 holes at 2.50 lira a piece	\$ 33.78
2. Young plants, 80 at 80 centimes a piece (bought outside).....	10.81
3. Transporting and planting same, 4.60 lira per five	4.44
4. Fertilizing and carriage of fertilizer, at 1.50 lira per plant	20.36
5. Props, 70 at 25 cms.	3.38
6. Quota of general expenses and land tax; equal to 4% on capital (2,000 lira).....	15.44
7. Interest at 5% for six months for preliminary expenses	1.91
8. Interest at 5% on land capital	19.30
Total liabilities at end of first year.....	\$109.32
From this deduct proceeds from vegetables grown between the rows of almond trees in first year	7.72
Final liabilities at the end of first year.....	\$101.60

(a) Conversions on basis of the par value of the lira which is worth 19.3 cents in U. S. currency.

The gain from crops grown between the trees can be set off against this cost in the more level sections. The above is merely an estimate, however, and at present the figures would probably have to be doubled. One cannot estimate the cost on mountain farms where the farmer and his whole family, male and female, work among the trees for a bare subsistence. Wherever there is a level space on the mountain side a bulkhead is put up and a tree is planted. When harvest time comes the crop is harvested by the family. The same labor cures and dries the nuts and cracks them in the evenings and on wet days.

It is very difficult to determine the value of the land or the cost of production in Italy. The orchards, except in the case of large estates, have been planted at random according to the necessities of the peasant farmer. The farm has generally been handed down from father to son and sales are very infrequent. Such a thing as attempting to show a definite return or a definite investment is unknown. When one tree dies another is put in its place. If almonds happen to be doing well that year, an almond tree will replace the olive or other dead trees; if olives are paying better they will replace almonds.

LOW STANDARDS OF LIVING RENDER COMPETITION POSSIBLE.

The peasants are in most cases miserably poor and have few wants. They live for the most part off the produce of their small holdings and their expenses are paid from the cash profits of the almond crop. The standards of living are so low that competition with

Italian almonds for grinding is eventually going to be particularly difficult for American growers. Unless by intensive cultivation and careful selection of stock we raise only the highest grades of almonds for the confectioners' trade, we cannot succeed in making the growing of almonds a paying proposition. In the raising of rough grinding almonds it would not appear that we can accomplish much if our growers are to maintain the high standards of living to which they are accustomed. On the large estates in Italy more modern methods are used but cultivation is still extremely primitive, cheap hand labor being used for everything. With labor running at considerably less than 50 cents a day there is not the same call for efficiency, and the people themselves seem quite content with very little.

THE ALMOND INDUSTRY IN SICILY.

Almonds are grown in every part of Sicily. The principal sources of supply, however, are along the east coast from Messina to Syracuse and in the interior from Caltanissetta to Girgenti. Although practically all of the almond concerns in Sicily operate under Italian names they are owned in many cases by foreigners. In Sicily we have three classes of almonds, the razor blade varieties or long slender almonds used by confectioners for sugar coating, the rounder almonds of good shape for the chocolate coating and almond bars, and the rough grinding almonds.

The production of almonds in Sicily amounts to from 120,000 to 150,000 hundred kilo bales (26,455,000 to 33,170,000 lbs.) annually. A hundred kilo bale weighs 220.46 lbs. Syracuse is the home of the

Avola almond sometime called the razor blade variety, the finest almond grown in Italy. It is used by the best grades of American and French confectioners and is said to compare favorably with the best Jordan almonds of the Malaga district in Spain. These last, however, are much better known.

SICILIAN ALMOND GRADES.

There is the same trouble in Sicily as in Bari with the grades, though the houses being older and more thoroughly established are more dependable. There are about twenty-five known varieties of almond trees in Sicily of which only about one-third produce nuts that can be included in the Avola grade. The output of Avolas amounts to about 4,409,200 lbs. annually. The Avolas are first hand shelled and sorted and then graded, usually through sieves. These grades are very strict and only for the finest trade. All misshapen and broken and twins are rigorously excluded.

There are four grades of Avolas, as follows:

Grade.	Sieve.
Small	34 - 36
Medium	36 - 37
Large	37 - 37
Largest	37 - 38

The second class of nuts are the Aetnas which grow along the coast. These nuts are used for the candy and taffy trade, for the chocolate coated trade and for the chocolate bar trade. In this trade a high class almond is desired, but the shape of the nut is not as

important as in the sugar almond trade. The Aetnas are generally divided into two grades, the Aetna Current and the Aetna Hand Picked.

The former comprises the general run of the nuts as they come, with twins and broken nuts excluded, while the latter is made up of hand picked varieties, which are further divided into the four following classes:

Grade	Sieve	No. per ounce
Small	34-36	35-40
Medium	36-37	28-30
Large	37-37	24
Largest	37-38	20

After these grades, which are not official there are countless other grades made up by individual firms under trade names to accommodate certain lines of trade. A firm for example may put up a fancy grade called "Grade A" for the use of the chocolate coated buyers, another called "Grade B" for taffy makers, and another called "Grade C" for chocolate bar makers.

The Caltanissetta to Girgenti district produces the well-known Palma Girgenti almond, one of the best of the Italian almonds. This crop is sold mostly in bulk and is divided into the Current and Hand-picked grades, which are free from all twins and broken. The grades are as follows:

Grade	Sieve
Palma-Girgenti Current	36
Large	36
Extra large	37

Grade	Per Ounce.
The hand-picked are:	
Largest	20
Large.....	24
Medium.....	28 - 30
Small	35 - 40

The firms handling the Palma-Girgenti almonds also handle a number of private brands for special uses as in the case of the Aetnas. Many of the Palma-Girgentis are handled through Palermo where there are large houses handling not only these almonds but also those from the east coast. There are also exports from this district of unshelled almonds usually bleached for the grocery trade. These are sold in three grades, Current, Rounds and Flats.

METHODS OF PRODUCTION HAPHAZARD.

As in southern Italy the almonds of Sicily are produced by ignorant peasants and it is difficult to ascertain anything in the line of the actual cost of production. The same low level of intelligence and illiteracy prevails and the same condition of the entire family working in the fields and in the orchards is found. Most of the orchards are on rolling land or scattered over the steep mountain sides wherever there is room to place a tree. All of the land is terraced. The stone used for the terracing is close at hand, and the amount of labor put into stone walls is enormous. The acreage of Sicily, and especially of the Girgenti district, is steadily increasing and it is conservatively estimated that it has doubled in the last

thirty years.

The trees which produce the Avolas grow only to the south-east of Syracuse and are very difficult to handle. They are very easily affected by changes of temperature, and the crop is often lost or badly damaged by frost. Attempts to use these trees in other parts of Sicily have been unsuccessful. These trees are of course the best payers and great care is taken of them. They are carefully cultivated and pruned and the ground is treated with artificial fertilizer. It is claimed that the price of almonds is so low that the use of fertilizer in other parts of the Island is impossible.

Professor Tamaro gives the following two formulas as the best fertilizers for almonds:

(1) Stable manure	66.14 pounds.
Thomas' slag.....	8.82 "
Sulphate of potash.....	8.82 "
Woolen rage.....	8.82 "
Chalk.....	8.82 "
(2) Stable manure.....	66.14 "
Powdered bone.....	8.82 "
Chlorate of potash.....	2.20 "
Woolen rags.....	8.82 "
Chalk.....	3.82 "

DISTRIBUTION OF SICILIAN ALMOND CROP MORE EFFICIENT.

On the whole the distribution of the almond crop of Sicily is much more intelligently and honestly handled than is the case with the Bari crop. Grading though not up to the Spanish standards is adequate and is improving. On the east coast at Messina, Catania and Syracuse machinery for grading and shelling is being introduced with considerable success. There is not a great deal that the American

producer can learn from the Italians in the matter of almond culture. The Italians in fact refer to the superior science of the Californian growers. It is important, however, to keep in close contact with such Italian men of science as Professor Luigi Vivarelli of Andria, Enrico Pantanelli at Bari, and Gaetano Briganti at Portici. These men are doing valuable work in the field of investigating the conditions of growth, diseases and the culture of almonds, and what is more, they are educating the younger generation in scientific culture of almonds. This means that in a few years great strides will be made in almond culture and with endless cheap labor at the command of both the Bari and Sicilian almond growers, and with the improvement in grading that will naturally follow intelligent cultivation, almonds will assuredly be put on the market at prices which will defy competition.

ALMOND PRODUCTION STATISTICS FOR ITALY.

The following table compiled by the Office of Agricultural Statistics of Italy gives the production of almonds in the shell by districts during 1915, 1916 and 1920:

Districts.	1915	1916	1920
	Pounds	Pounds	Pounds
Piedmont	---	---	---
Liguria	1,102,300	440,920	661,380
Lombardy	---	---	---
Venetia	---	---	---
Emilia	881,840	220,460	220,460
Tuscany	881,840	220,460	220,460
Marche	1,102,300	1,763,680	1,322,760
Umbria	---	---	110,230
Latium	440,920	220,460	110,230
Abruzzi & Molise	661,380	4,409,200	2,204,600
Campania	4,409,200	6,393,340	5,291,040
Apulia	19,841,400	91,711,360	47,619,360
Basilicata	---	---	220,460
Calabria	1,763,680	1,763,680	1,102,300
Sicily	103,616,200	132,937,380	236,994,500
Sardinia	5,511,500	8,377,480	7,275,180
Total	140,212,560	248,458,420	303,352,960

Note - The export figures of the Italian Government for the ten year average, prior to 1916, indicate that the home consumption of almonds in Italy was 50% of the national production.

VEGETATION PHASES IN ITALIAN ALMOND INDUSTRY.

Professor D. Tamaro gives the following chart of the different phases of vegetation of almond trees in the various sections of Italy:

Districts.	Foliation	Blossoming	Fruit ripenes	Leaves fall
1. Piedmont	April 10-20	March 10-20	Sept. 1-10	Nov. 10-20
2. Lombardy	March 20-31	March 1-10	Sept. 10-20	Nov. 10-20
3. Venetia	March 20-31	March 10-20	Aug. 20-31	Oct. 20-31
4. Liguria	---	Jan. 10-20	---	---
5. Marche & Umbria	April 1-10	March 1-10	June 20-30	Oct. 1-10
6. Emilia	March 10-20	March 1-10	July 1-10	Oct. 10-20
7. Tuscany	March 10-20	Feb. 20-28	Aug. 20-31	Oct. 10-20
8. Latium	---	---	---	---
9. South Adriatic	March 1-10	Feb. 10-20	Aug. 20-31	Oct. 20-31
10. South Mediterranean	March 10-20	Feb. 10-20	Aug. 10-20	Oct. 1-10
11. Sicily	Feb. 1-10	Jan. 10-20	Aug. 1-10	Oct. 10-20
12. Sardinia	Feb. 20-28	Feb. 1-10	Oct. 20-31	Nov. 10-20

The American almond industry may be interested in connection with Mr. Foley's review of the almond industry in Italy in a report submitted to the Bureau of Agricultural Economics, U. S. Department of Agriculture, by American Consul Homer M. Byington, at Naples, Italy, under date of Sept. 29, 1922. This report reads as follows:

"SOUTH ITALIAN NUT CROPS.

"One of the most important industries, from the standpoint of international trade, in Southern Italy is the growing and export of nuts and nut meats. During the first six months of 1922, a period that may be taken as fairly typical, the value of the declared export of nuts to the United States, through the port of Naples made up approximately one sixth of the total value of all exports for that period. The value of the exports of almonds alone was greater than any other one product, with the exception of cheese. It must be remembered further that these figures extend only up to June 30th and do not cover the time of the heaviest nut exportation, August and September when the newly matured crop comes into the market.

"Declared Exports for First Semester of 1922.

"During the first six months of 1922 the declared exports to the United States through the port of Naples were as follows:

Commodity.	Quantity.	Value.
	Pounds.	
Almonds.....	2,217,237	\$ 455,053
Chestnuts.....	141,958	6,841
Filberts.....	1,417,805	133,037
Walnuts.....	332,866	60,221
Totals.....	4,109,866	\$ 655,152

"These amounts, according to the statistics for all Italy as issued by the Minister of Finance, constitute only a little over one tenth of the total exports of nuts for the whole nation, during the same period. As has been stated, the largest exports are during the fall of the year and if predictions of exporters hold true these amounts will be more than quadrupled.

"Prices and Crop Forecasts.

"This year's crop of all the nuts mentioned according to the statements of the growers and exporters, will be excellent. As far as the almonds and filberts are concerned this favorable outlook is no longer open to question. Both crops mature in August and are now on the market at prices 10% to 15% lower than in 1921.

"The chestnut and walnut crops do not come into market until the latter part of September. So far, in the advance selling, prices are about 30% lower than in 1921. This is partly due to the dry weather during the early part of the year, which materially checked the fly pest which ruined a large part of the 1920 and 1921 crops. It is believed that production generally will be at least 25% greater than in 1921.

"Current Market Quotations.

"The current quotations for almonds as given by the Banca di Roma are as follows:

Commodity.	Price - Lira.	Price Dollars.
Naples, sweet, shelled	1,300 a quintal	56.52
" hard in shell	290 " "	12.61
" soft " "	580 " "	25.21
Bari, sweet, shelled	930 " "	40.43
" sweet in shell.....	185 " "	8.04
" bitter, shelled.....	485 " "	21.09
" bitter in shell.....	100 " "	4.35
Catania, sweet, shelled.....	1,020 " "	44.35
" sweet, in shell.....	220 " "	9.56
" bitter, shelled.....	525 " "	22.83
Palermo, Cavaliera.....	725 " "	31.52
" sweet	1,025 " "	44.58
" Mollese	400 " "	17.40

"The above prices are per quintal of 220.46 pounds and have been converted into American currency at the rate of 23 lira to a dollar. The prices for filberts do not vary materially, ranging from 300 lira (\$13.05) per quintal to 350 lira (\$15.22).

"Choice Grades Bring High Prices.

"Naturally the sweet shelled almond brings the highest price. Quality, however, should not be judged entirely on the price. The Naples almond brings the highest prices, but it is not generally considered to be as good as the Bari, which costs less than any of the

others. This is to be accounted for by the fact that the Naples almond has a very hard husk and the labor and loss involved in preparing them is nearly ten per cent greater than in the case of the Bari nuts.

"On the whole, it is safe to say that the Bari almonds are the best produced in Italy as regards flavor. They are, however, excelled by the Sicilian product in the percentage of oil. There is, moreover, another difference between the two kinds. The Bari almond is of the shape most familiar in the United States, irregularly spatulate, coming to a point at the upper end. These almonds are either eaten raw, roasted or made into candy. The Sicilian and Neapolitan nuts, on the other hand, are more nearly round and are used either for oil or for the manufacture of nougat.

"By-Products Pay for Shelling."

"From the husks of the sweet almonds and the entire fruit of the bitter almond come products that pay the farmer for the cost of shelling the edible nuts and give him a clear profit on their sale. Some of the bitter almonds are mixed with the sweet variety in the making of candy, to give a more piquant flavor, but the larger part of the bitter crop is pressed for the oil. This oil is used in the manufacture of various cosmetics and yields hydrocyanic acid when broken up. The almond meal, the cake after the oil has been expressed, is also used in the manufacture of cosmetics. Hydrocyanic acid is also obtained from the husks.

"Another use to which the bitter oil is put is in the manufacture of imitation Angostura bitters.

"Annual Production in Southern Italy."

"It is difficult at the present time to judge accurately what the production of any of the principal nut crops will total. The walnut crop for instance amounted to 9,800,000 pounds in 1921. This year the estimates place the amount at about 12,375,000 pounds.

"It seems probable that the chestnut crop, which is progressing satisfactorily will be about 2,254,000 pounds or over. The almond crop has been variously estimated and will probably be around 5,000,000 pounds. This is the weight in shell, not the net weight."

PART II.

THE ALMOND INDUSTRY IN SPAIN.

Almond trees are scattered all over the east and south coast of Spain, from Barcelona in the north to Malaga in the south, and over the Balearic Islands. The Chamber of Commerce of Palma, the capital of the Island of Majorca, estimates that the area devoted to the production of almonds in the Balearic Islands is over 20,000 hectares (49,420 acres). The almonds produced in these Islands are grown both on the larger estates and by peasants on small farms. The natives are considerably in advance of the growers on the Spanish mainland. Their homes are much better and the average of intelligence is higher. There is not the same struggle for existence that is seen on the Spanish mainland.

ALMONDS CONSTITUTE CASH CROP OF MAJORCA.

The almond crop of Majorca, the largest of the Balearic Islands, constitutes the cash crop of the country. The nuts are put away when cured and shelled during the year as the necessity for cash arises. Natives are thus able to hold their almonds for a better price than the less provident growers on the mainland. For this reason we find the crop of the Balearic Islands coming into the market at all times of the year. The almonds grown in the Island of Majorca are used mostly for grinding and for the confectionery trade. There are only two really high class confectionery almonds grown on the Island. These are the Inca and the Polanitax. The quantity of these grades is very small and compared with the large volume of grinding almonds it is al-

most negligible.

The quality of the Majorca almonds is generally better than that of those grown on the mainland. They are extremely sweet and contain no bitters. The trees blossom along in January and the nuts are gathered in September. There is considerable damage from cold during the months of February and March but by June the crop is considered safe. The average crop for a good year is commercially considered at 40,000 - 100 kilo bales (8,818,400 lbs.).

GROWERS IN MAJORCA SEEK MARKET IN THE UNITED STATES.

Up to a few years ago the almonds grown in Majorca were chiefly shipped to Marseille and marketed through France. Now they are marketed through important houses both in Palma de Mallorca and through the rather important almond houses at Tarragona, Reus and Valencia, which are situated on the mainland. While the Germans have made purchases in Majorca, German houses have not been established there. The almonds are sold since the war to England and the United States, France and a few of the Central Empires. As in the case of the Italian almond growers there is now a search for new markets especially in the United Kingdom and the United States, to take the place of those lost by the collapse of the Central Empires.

BALEARIC ALMONDS COMPETE WITH ITALIAN.

It is generally considered that the almonds of the Balearic Islands come directly into competition with those of Bari and Sicily. The producers on these Islands attempt to keep their prices lower than

those of Italy. However, there is some trade even between the merchants in Italy and Majorca. The almonds are so similar that advantageous orders are filled either from the Bari or Majorca production.

Almonds are graded into two kinds, the Proprietario and the Corriente. There are some hand-picked almonds which are sold as selected grades. The Corriente are the remains after the selected are taken from the ungraded stock. The Proprietario is the grade as it comes from the growers.

The following gives the average price of Majorcan almonds during 1920 and 1921:

Grades	1920.		1921.	
	Pesetas	Cents	Pesetas	Cents
	Per. cwt.	Per lb.	Per. cwt.	Per lb.
Felanitax	385	54.8	408	49.3
Inga	366	52.1	392	47.4
Propietario	315	44.8	367	44.3
Corriente	273	38.8	345	41.7

Note: Average value of peseta in U. S. currency during 1920 amounted to \$0.15938 and to \$0.135314 during 1921, according to the U. S. Federal Reserve Board. One cwt. is equivalent to 112 lbs.

The general farming of the Balearic Islands is rather high-class. On the low lands there are terraces to provide against the washing of rains, and in the hilly section the land is terraced right up to the top of the mountains. Labor is entirely by peasants who earn from 20 to 40 cents a day. Considerable fertilizer is used throughout the Islands.

As in Italy it is quite difficult to ascertain the cost of production. We find throughout Spain that very little is being done

by the Departments of Agriculture and statistics are very badly kept, so badly indeed that the general mercantile public pays no attention to them. Fairly good almond land, however, can be purchased in the Islands for about \$31.00 to \$47.00 per acre.

BALEARIC METHODS OF SALE.

A considerable portion of the output of the Balearic Islands is handled through the houses at Reus and Valencia. It will be noted that there is communication by sea with both Valencia and Barcelona from the Balearic Islands. The trade, however, is usually handled through Reus where there are important houses handling also the Tarragona production.

As in the Italian almond trade we find the various dealers making up named grades of their own. This practice has originated from the fact that certain dealers have come to know the wants of certain large chocolate bar and almond paste producers and get up grades which will particularly appeal to these manufacturers. The sales are made usually to the United States on the cost and freight basis - the insurance being usually placed in New York. For London sales it is generally cost and freight London. The almonds are usually sold on telegraphic offers which are good for twenty-four hours, changes in exchange making longer offers impossible.

PAPER SHELLLED ALMONDS SPECIALTY OF IVIZA.

The island of Iviza, the smallest of the Balearic group, has quite an important production of paper shelled almonds. It is usually

considered that a good commercial crop of the Island of Iviza amounts to about 15,000 bales (unshelled) of 100 kilos, which is equivalent to 3,306,900 lbs., a kilo weighing 2.2046 lbs. avoirdupois. These are sold to the grovery trade through dealers in Valencia.

SPANISH MAINLAND DIVIDED INTO THREE COMMERCIAL SECTIONS.

For commercial purposes the almond growing districts on the Spanish mainland are divided into three sections. The first is the Tarragona district which extends from Reus to Costel. This district produces from 4,409,000 lbs. to 5,512,000 lbs. The second district, sometimes known as the Valencia district or the Alicante district, extends from Costel to Granada. The production of this district is about 11,023,000 lbs. The third district is the Granada and Southern district adjacent to Malaga. The production of this district is about 8,598,000 lbs., of which 3,086,000 lbs. are Jordan almonds and the balance Valencias, sometimes known as the Malaga-Valencia varieties. The above figures of production were given by a number of leading merchants in the various cities of the districts mentioned. Barcelona is the leading export point for Northern Spain, Valencia and Alicante for Central Spain, and Malaga for Southern Spain.

In the northern district we have principally grinding almonds which are used for almond paste and better grades for chocolate coated almonds, chocolate bars, salted almonds, etc. In the southern district we have the higher grades known as Jordans, which are used by confectioners exclusively for sugar coated almonds. There is a very large call for this class both in the United States and Great Britain. The

trees, however, on which the Jordans grow are very susceptible to frost and can only be raised in the southern districts.

GRADING IN THE TARRAGONA DISTRICT.

The Tarragona or the northern district lies along the coastal plains just south of Barcelona. We have here a peasant population raising almonds in a rather primitive fashion upon the poorest land available. The farms are in many cases small and poor. The trees are irregularly planted and in many cases not carefully cultivated. As a result the almonds produced are of a rather low grade. The grading and cracking is done by the peasants or the speculators who buy from the country storekeepers and grade before selling to exporters. Although at the present time the greater part of the grading is done by hand, successful machines have been introduced both for cracking and grading. Grading in this section has not yet attained the efficiency of the southern district, due to the fact that the almonds are of a rougher type and are considerably cheaper than the finer almonds further south.

The principal almonds of this district are the Esperanza Choisie, the Esperanza Courantes, the Lerguetas, the Marconas and the Communas Roude. These are divided as follows:

Grade.	Divisions.
Esperanza Choisie:.....	Hand-picked uniform nuts from which all twins, broken, etc. are excluded;
Esperanza Courantes:.....	Or the almonds as they are received from the farmer;

Continued.

Grade.	Divisions.
Larguetas:.....	Graded: Choice - Large, Choice - Small, Courantes;
Marconas:.....	Graded: First 17 - 19 to the ounce. Finest 23 - 25 " " " Medium 26 - 28 " " " Venus 30 - 32 " " "
Communas Roude:.....	Hand-picked - broken, twins, etc. excluded. Proprietaire - as they come from the farm.

The average price per 100 pounds, f.o.b. Tarragona for Esperanza Choisie, Esperanza Courantes and for Larguetas received during 1920 and 1921 were as follows:

Grades.	Average price per 100 pounds, f.o.b. Tarragona.	
	1920.	1921.
	Dollars.	Dollars.
Esperanza Choisie	28.92	23.01
Esperanza Courantes.....	25.84	22.65
Larguetas.....	31.99	27.00

HANDLING AND CULTIVATION OF TARRAGONA ALMONDS.

These almonds are handled chiefly through dealers at Tarragona and Reus and are sold to the United States and Great Britain. There was also a considerable trade with France during the present year (1922) due to the fact that the Province crop this year was practically a failure.

It might also be noted that there is a considerable trade there in Majorca almonds. The sales in the Tarragona district to New York and London are on the basis of cost and freight. Credit is usually established in London for the purpose of paying for consignments.

The land on which the almonds grow is the poorest and cheapest limestone land in the district. Almonds are found only on the land where almonds can depend on rain for moisture. This is the country where good oranges can be grown and where irrigation is possible. There is excellent irrigation on most of the lowland upon the entire Spanish coastal plain, and oranges, lemons and rice take the place of almonds wherever irrigation is possible since they are a more profitable crop. The value of the land in this district runs from 500 to 650 Pesetas per hectare (\$39 to \$51 per acre at normal exchange). Fertilizer is not extensively used in the almond orchards of this section, as the prices realized are not high enough to meet the expense. Phosphate and nitrate fertilizers are used in some cases, but not extensively.

CENTERS OF DISTRIBUTION FOR CENTRAL SPAIN.

The middle district of Spain has two important sections of distribution - Valencia on the north and Alicante on the South. Both are ports of call for most of the British and American ships plying from Barcelona. The conditions throughout this district are very much the same as in the district around Reus, although being further south there is less damage from frosts and quick changes of temperature. It might be well to note that it is the quick changes of temperature rather than the frosts which do the real damage in these districts. Along the coastal

plains exceedingly hot days are likely to be followed with a frost. On such occasions the water proto-plasm which has been frozen by the frost is rapidly thawed out in the warm sun and converted into vapor. In this rapid conversion from ice to vapor the tissues are ruined. When a cold day follows a freeze much less damage is done as the thawing is slower. It is also noticed that trees on hills with a northern exposure are much less liable to damage than those with a southern exposure. Some efforts are made in this district to smudge in case of frosts. Smudge pots are unknown - the smudging is done by burning dead trees, straw, etc.

ALMOND GRADES OF THE CENTRAL DISTRICT.

Three grades of almonds are found in the Valencia or central district. They are the Marconas, Communas and Valencias. The Marconas almonds are a stubby broad flat almond, used for the chocolate coated almond trade. The Communas are a longer and flatter almond than the Marconas and are also used for the chocolate coated almond trade. The Valencia are unselected almonds, which are sent in bags to England for grinding. The Marconas and Communas varieties are usually sold in boxes and are graded according to the standards given for Marconas in the Alicante district mentioned in the following paragraphs.

The district about Valencia is not a heavy producing district for almonds. The heaviest part of the production of the central district is about Alicante and is handled through the houses at Alicante. The principal almonds in the Alicante market are the Marconas, a round sweet almond, which is quite popular in the United States.

The Marconas are graded as follows:

First	17 - 19 to the ounce.
Finest	23 - 25 " " "
Medium	26 - 28 " " "
Venus	30 - 32 " " "

There are also in this district the Planetas, which are graded as follows:

First	17 - 19 to the ounce.
Finest	23 - 25 " " "
Medium	26 - 28 " " "
Venus	30 - 32 " " "

Twins and broken are rigorously excluded from these gradings. As in the northern part of the district the almonds are grown on poor land which is strong in lime. Very little fertilizer is used. Of the crop of 11,023,000 lbs. only 1,653,000 lbs. can be classed as choice. The general value of the almond land in this district runs from 650 to 750 Pesetas per hectare (\$51 to \$59 per acre at normal exchange). There has been quite an increase in the land planted in almonds. The extent of the increase can be judged by the fact that about 15 years ago the almond business ran for about three months a year, whereas it now runs almost the whole year.

MARKETING METHODS IN CENTRAL DISTRICT.

The almonds in the central or Valencia and Alicante districts are produced largely by the poorer peasants. As in the northern districts the best land is devoted to citrus growing. The crops there are handled by middle men who go through the country buying where they can. The usual custom in that section is to work on telephone orders from the larger cities. The buyers get quotations from the houses in

Valencia and Alicante and buy where they are able. Quite a little stock comes from the storekeepers, who get the almonds from the small farmers, for advances made usually in merchandise, during the winter.

There is no contracting ahead for crops, or future buying.

Money lenders are not very active and little or no crop comes in through their hands. The final exportation of the almonds in that section is in the hands of American, British and German firms. The middle men do the purchasing from the farmers, shell and often grade the almonds. The exporting houses usually want to see exactly what they are getting before buying. There is, of course, the old contest between the farmer and the distributor, but the final exporters prefer to deal with the middle men whose grading is usually pretty high class and dependable.

As in the northern district much of the outside trade is carried on by telegraphic orders. This section is a considerable distance from efficient mail service and the telegraph is the only means of satisfactory communication with the outer world. There has been some effort in late years to increase the area in higher class almonds. On the large estates this has been done with considerable success, though little has been accomplished by the small farmer. The living conditions in the southern part of the district are the same as those prevailing in the southern district and will, therefore, be considered there.

SOUTHERN DISTRICT PRODUCES FINEST ALMONDS IN EUROPE.

The production of the southern district, consisting of Granada and the south, is commercially estimated, according to varieties, as follows: Valencias 25,000 and Jordan 14,000 kilo bales (5,516,500

and 3,086,440 lbs.). This district produces the finest grade of almonds in Europe. It is the home of the Jordan almond, a long slim, well flavored almond of smooth texture, used exclusively by confectioners for sugar-coated almonds. The Valencias are a rougher almond for the chocolate bar, chocolate coated almond and general confection trade.

GRADING AND MARKETING IN SOUTHERN SPAIN

These almonds are graded by the buyers who buy from the storekeepers and producers. They are then handled by English, American and German houses and are graded by highly skilled work people. The grading standards set by the dealers in Malaga are the highest known for European almonds. It is the standard which the Italians hope in time to achieve. The cracking of the nuts is generally done by hand by the peasants, who do not realize the value of grading and are out to get all they can for their produce and what they can put into it. Instances are quoted of 10 kilos (22.046 lbs.) of soil in a 100 kilo (220.46 lbs.) bale.

The almonds come through the storekeepers, middle men and small merchants, to the exporters who have large houses in which the grading is done by hand. The process of grading is performed by women who have become very proficient at their work. They receive from 80 cents to \$1.00 a day. There is practically no machinery used for grading. Preference is given to hand grading because there is less damage to the nuts and because hand labor is cheap and abundant. In the process of shelling it has been found that 100 kilos (220.46 lbs.) of nuts will yield from 21% to 25% of shelled fruit.

In this section of the Spanish almond district and the southern part of the central district the influence of the American, English, German and French houses is distinctly noticeable. These houses have perceived the importance of the almond trade and have opened large establishments for grading. They have also encouraged the growers to raise better qualities of nuts, and have even gone into the growing business themselves.

Both Jordans and Valencias are graded according to Crowns, which is an arbitrary name for the grades adopted by the different firms. Although the sizes were originally worked out without reference to weight, they have been found to weigh as follows:

Jordans.

7	Crowns.....	16 - 17	per ounce.
6	"	19 - 20	" "
5	"	21 - 22	" "
4	"	24 - 25	" "
3	"	26 - 28	" "
2	"	29 - 30	" "

The Malaga or Valencias, or Malaga-Valencias, will be found to weigh as follows:

6	Crowns.....	16 - 17	per ounce.
5	"	20 - 22	" "
4	"	23 - 26	" "
3	"	28 - 30	" "
2	"	29 - 35	" "

These grades are very strict as to quality; all twins and broken almonds are rigorously excluded. The work is done mostly by hand and the percentage of error in weight sometimes occurring is very small. The almonds are boxed in boxes of 25 or 20 pounds.

PRICE SCALE OF JORDAN AND MALAGA ALMONDS.

The following price scale indicates the comparative value of the different crows:

Jordan Almonds.			
Grades.		1920.	1921.
		Cents per lb.	Cents per lb.
7 stars	16 - 17 to the ounce	51.7	29.9
6 "	18 - 20 " " "	50.2	28.7
5 "	21 - 22 " " "	48.3	27.5
4 "	23 - 25 " " "	48.5	27.0
3 "	26 - 28 " " "	47.1	25.9
2 "	29 - 30 " " "	46.7	25.6
Jordan Twins		36.4	25.4
Jordan Broken		37.0	23.8

Malaga Almonds.			
6 Crowns	16 - 17 to the ounce	30.7	30.6
5 "	20 - 22 " " "	29.6	19.8
4 "	23 - 26 " " "	28.6	19.1
3 "	28 - 30 " " "	26.3	19.0
2 "	29 - 35 " " "	27.8	18.6
Malaga Twins		22.9	16.0
Malaga Broken		21.8	15.6
Unselected Malaga		24.5	16.9

DEVELOPMENT OF ALMOND INDUSTRY IN SOUTHERN SPAIN.

In the beginning the almond crop of Southern Spain was considered only as a small source of revenue for the housewife, just as eggs in certain districts of America belong to the farmer's wife for pin money. Each farmer usually had a few almond trees in places where nothing else would grow, and when the crop was cured and gathered the proceeds went to the farmer's wife for pin money. It usually amounted to only a few Pesetas. On the advent of outside mercantile houses, however, almond

growing became more important. Perceiving that the almond crop was essentially a luxury crop and that there was much more money in the higher class nuts than in the rougher nuts, and that to get satisfactory results with the higher class nuts, grading was essential, these houses established grading and packing organizations and time developed the present system of grading. The farmer soon learned that there was more money in the product of higher class trees and accordingly planted more and better trees and paid more attention to the cultivation of his crop. Fertilizer is now coming more generally into use and pruning is improving. The improvement is slow, however, for the people are the most backward in Spain.

With the better financial showing of the almond crop a great interest was taken in the raising of almonds on the large estates. This interest has been a more recent development, so that the orchards on many of the large estates are just beginning to bear. This of course means an improvement in the supplies. It must, however, be noted that this region is an excellent one for citrus crops and one where the fertility of the land permits extensive citrus culture wherever there is sufficient water. The Spanish farmers are just beginning to realize that almost anything can be grown with plenty of sun and water and fertilizer.

The large estates on which special attention is given to almond culture are situated chiefly in Granada, where the rocky limestone soil is particularly adapted to almond culture and where water is not available for the irrigation required for citrus fruits. These estates are yearly becoming more important. The majority of small holders own

their own farms and are rather independent financially. Their needs are few and are mostly supplied from their farms. The almond and citrus are the cash crops for taxes, etc.

PRODUCTION OF ALMONDS IN SPAIN.

The production of almonds in Spain during the 1920-21 season has been estimated by the Comité Información de Producciones Agrícolas at 1,303,302 metric quintals (287,326,000 lbs.) gathered from 18,299,656 trees on an area of 78,742 hectares (194,570 acres). The following table compiled by the Spanish Government gives the details of this estimate:

(Official Estimates)				
Districts	Area	Number of trees	Production	Production per tree
	Acres	Number	Pounds	Pounds
Castilla la Nueva	1,433	202,177	1,906,538	13.2
Castilla la Vieja	778	78,072	884,926	11.0
Cataluna	49,667	5,226,007	80,232,449	11.0
Levante	74,718	6,018,136	94,137,081	17.6
Andalucia Oriental	8,965	1,038,362	15,179,773	15.4
Andalucia Occidental	4,507	222,572	5,889,809	19.8
Extremadura	195	16,603	272,929	15.4
Leon	4,443	398,546	5,365,555	15.4
Galicia	---	---	---	---
Vascongadas	7	2,356	32,849	13.2
Cantabria	12	4,500	59,524	13.2
Aragon	44,972	4,762,325	76,089,344	13.2
Canary Islands	4,313	300,000	7,275,180	24.3
TOTALS	194,570	18,299,656	287,325,957	15.7

The extent to which commercial figures vary from the official is indicated in the following table compiled by Manuel Excuse Bartoli, which gives the production of almonds in Spain during the 1920-21 season by provinces.

PRODUCTION OF ALMONDS BY PROVINCES. (Commercial Estimates)

Province	Pounds
Tarragona	4,125,069
Baleares	37,478,200
Almeria	29,585,732
Alicante	22,112,138
Murcia	12,786,680
Lerida	4,409,200
Malaga	3,968,280
Cadiz	2,572,768
Huesca	3,036,440
Canarias	3,516,337
Castellon	1,438,722
Cordoba	1,515,663
Huelva	1,763,680
Sevilla	1,093,482
Valencia	881,840
Batijas	881,840
TOTAL	171,216,071

SPANISH ALMOND EXPORTS.

The total export of almonds by countries from Spain during the years 1917 to 1921, inclusive, according to statistics compiled from both official and commercial sources was as follows:

EXPORTS OF ALMONDS FROM SPAIN 1

Country	1917	1918	1919	1920	1921
	Pounds	Pounds	Pounds	Pounds	Pounds
Almonds in the shell: To -					
Algeria	13,836	20,613	93,043	35,080	51,524
Argentina	355,007	654,313	147,790	203,864	141,059
United States	6,031,673	6,130,472	6,551,888	4,668,437	5,172,602
France	2,089,121	3,173,835	2,646,146	1,049,892	901,302
Great Britain	432,320	821,687	4,869,613	4,436,279	5,944,602
Holland	...	...	114,337	8,133	81,817
Italy	319,226	22,469	35,648	330,831	119,705
English Possessions					
in America			30,203	178,440	668,335
Other Countries	639,554	708,799	1,195,200	950,247	473,121

Exports of Almonds from Spain (cont'd.)

Country	1917	1918	1919	1920	1921
	Pounds	Pounds	Pounds	Pounds	Pounds
Shelled almonds: 2.					
To-					
Algeria .....	...	21,826	30,468	18,741	59,216
Argentina	446,828	543,547	623,207	866,280	460,356
United States	6,944,836	1,619,160	15,786,750	8,175,181	10,340,220
France	363,283	3,438,050	2,111,548	1,750,223	2,117,944
Great Britain	1,309,859	70,580	5,952,451	4,412,606	4,605,264
Holland	17,527	...	...	...	...
Italy .....	...	...	23,651	16,640	27,723
English Possessions :	...	...	...	...	...
in America	5,803	...	111,833	55,787	74,075
Other Countries	1,243,747	2,122,357	3,942,345	1,153,023	817,426

1. According to private accounts these export figures are much below the actual shipments, as large quantities are sent out which are not reported to the customs officials.
2. No statistics are available on the comparative weight of kernels and shells of Spanish almonds, but it is stated that almonds generally lose 2/3 or 3/4 of their weight in the shelling process.

GENERAL NOTES ON ITALIAN AND SPANISH ALMOND GROWERS.

An attempt has been made in the preceding sketch to portray conditions in the almond growing sections of both Italy and Spain. As already pointed out costs of production are most difficult to ascertain as no attention is given to that phase of the business by any of the farmers. There is very little trading in land in any of the producing sections for the owners have no incentive to sell. If they sold they would only have to buy again. The little farms of Italy and Spain have a sentimental value that does not exist in the United States. The farms pass along from father to son and each is content. Education is very meagre - the best of the farmers being unable to do much more than read and write. There is very little

, desire to go ahead, and if the farmers do want to improve their lot they generally emigrate to the United States and pick up what to them is easy money. The majority seem to be satisfied in just getting along, ever putting off until tomorrow what could be done today.

This spirit is not quite as true of the southern Italian as of the Spaniard. The Italians are probably more industrious, but the conditions under which they labor are very hard. Their land is not usually very productive, as the productive land is usually found in the large estates. Education is not generally available in either Italy or Sicily. There is, however, a spirit of progress being instilled into the peasants by the Italian Department of Agriculture that is going to mean much in the future. The Departments of Agriculture at Bari and in Sicily are quite up to date and are working with the farmers and also with the trade. In close cooperation with both are very excellent Chambers of Commerce. The leading Italians run you over to the Chamber of Commerce quite in the manner of a Los Angeles booster.

Although the Italian almond growers still have great strides to make in development, they are going to improve their almond business and are going to be much keener in competition in the future. Their business methods are bad and must be improved. If they are not improved the business will be taken over by others who have the commercial honesty and ability which is at present lacking. We must not rely on these people to stay where they are. There is a spirit of progress which, coming after long periods of political oppression and heavy taxation, coupled with a total lack of education, will pull them through the present difficulties.

The Sicilians are also yearly improving their position, and the dependable houses at Syracuse, Messina, Catania and Palermo will make that industry safe. These two sections, the Italian and Sicilian, are of course the close competitors of the Mallorcan and the Spanish growers. This competition is a keen competition; in fact, it is so keen that the man with the cheapest almond is able to keep his competitor almost completely out of the grinding and rougher almond market.

As to the Spanish side of this competition, we have the Mallorcan who is a good farmer, quiet and industrious. He, like the Italian, lives a very self-contained life, getting most of his needs from the land he tills. His wants are few and living as he does, in an easy mild climate, seems really the happiest and most contented peasant of Europe. However, as a competitive factor he is a dangerous item for the Italian. The Spanish grower feels that he must keep his prices below those of the Italian market, but if Italian prices are too low he can come in and hold his crop through the winter selling only when he has need for cash. His distribution is poor - a few big houses in Palma, Majorca, do a good business but a large volume of the trade is handled through Reus and Valencia.

The almonds on the Spanish mainland are grown by peasants whose advancement may be realized by the fact that they are still threshing their wheat and rice by the old method of driving horses over it on the threshing floor. Developments in sanitation and education seem to have been just as backward. The wants of the peasants are simple and few and their standards of living are economically low. Their farms support them and the increase in their flocks and the fruit of their

citrus and almond trees supply their needs for cash. They are, however, happy and contented and have no wants that cannot be supplied from their farms. Italian competition is always an important factor in regard to the rougher classes of almonds, but as the Italian and Spanish peasants' living conditions are about the same, the latter are able to take care of themselves and the market whipsaws between them. It is interesting to note in this connection that very little government aid is given by the Spanish Government or the Spanish Department of Agriculture.

In the southern part of Spain the finer almonds have little competition and more progress is made under the urge of higher prices. The general crops in this section have shown considerable improvement during the last few years. The same low levels and standards of living, however, are also found in the southern part of Spain, due probably to the manana spirit prevailing in that semi-tropical country and the general satisfaction of the farmer with his present condition.

Competing with themselves the Italians and Spaniards put up a close and hard fight and the advantage swings from one side to the other. Considered from the American agricultural point of view, however, it is most dangerous and deadly, for American growers with their high standards of living can never hope to bring their product into successful competition with the almonds grown in Italy and Spain where the needs of the peasants are so easily satisfied. It is therefore important that American growers treat the almond growing industry as a luxury business only, so that by raising only the finer grades and by intensive cultivation they may overcome, if possible, the cheap labor and low standards of living that prevail in Spain and Italy.

NO ACCURATE TRADE STATISTICS AVAILABLE.

It has been thought advisable to mention at this time that the trade statistics of Italy and Spain given in this report have been compiled from both government and commercial sources. This has been done because of the general attitude of the trade in Italy and Spain towards government statistics. In the first place much of the crop in Italy goes overland to the other countries of Europe. The records of these shipments are carelessly kept and much is lost. Thus the home consumption of almonds in Italy can be figured from government statistics as 50% of the total production. Leading merchants, however, do not consider that it amounts to more than 25% or 30%.

There are no accurate figures of any kind kept in Spain. The only accurate figures are those of the United States Consulates. Taxes are assessed both on the returns of trees, acreage and production, and the farmer will not give any accurate figures because he knows that he will be taxed on the basis of his returns. These factors and others make it impossible to place any reliance on government statistics alone. The home consumption of Spain is no larger than the home consumption of Italy. One can safely say that the greater part, in fact almost the entire crop, of both countries is exported. The people are too poor to eat the almonds. They are the cash crop and are sent to foreign countries where good prices are realized.

LARGE CROP OF POOR QUALITY EXPECTED IN BARI.

The Bari crop this year will be larger than last, in fact, it

is a bumper crop, estimated at anywhere between 77,161,000 lbs. and 88,184,000 lbs. The Bari crop is now considered to be safe from damage of any sort. The carry-over from last year was on June 1, between 6,614,000 lbs. and 11,023,000 lbs. which will be disposed of in the ordinary course of events before the new crop arrives. Although the Bari crop will be large, it will not be as high grade as last year. A larger quantity of the smaller grades of rough almonds and a much smaller quantity of the better grades are expected.

The crop of the Syracuse and Catania district will be a good one. The Aetnas from the Catania district will be heavy and the rougher almonds in and about Syracuse will likewise be heavy. The crop of Avolas will be heavy with some scarcity in the better grades. The Palma-Girgenti district has also had a good season and the supplies will be heavy with the probability of an excess of the larger grades and a medium supply of the better grades. The total in this district should run between 26,455,000 lbs. to 33,069,000 lbs. The Palma-Girgenti variety will be up to normal. The bitter almond crop through Sicily will be heavy.

SPANISH PROSPECTS ENCOURAGING TO GROWERS.

The Island of Iviža will have from 3,307,000 lbs. to 3,748,000 lbs. of soft shell almonds. The Island of Majorca will have a heavy crop, which is considered past any possibility of loss through weather conditions. There is no carry-over in this district. The crop should run under present conditions as high as 11,023,000 lbs. On about June 1, the old crop was pretty well out of the way with about enough on hand to

run until the new crop comes on hand. In this district they were already quoting the new crop at considerably less than last year's crop.

The Reus and Tarragona districts also show a heavy crop. The total production of those districts will be from 5,512,000 lbs. to 6,614,000 lbs. The same conditions as in Italy will exist here, i.e., owing to the large crop there will be a small supply of high class almonds and a plentiful supply of small grinding almonds. The district from Costel to Valencia will also have an excellent crop. It will run well over 9,921,000 lbs. This crop will also show a larger percentage of the rougher grades. The Alicanti district, which is included in this district, shows all indications of a heavy return, and out of 2,646,000 lbs. to 3,307,000 lbs. there will be about 15% fancy almonds.

The crop in the Malaga district there will range from 8,818,000 lbs. to 9,921,000 lbs., of which 3,086,000 lbs. to 3,527,000 lbs. will be Jordans and 5,732,000 lbs. to 6,393,000 lbs. will be Valencias. Jordans are certainly in larger supply than last year and they will be marketed several weeks earlier. Valencias seem to be in even larger supply, proportionately, than Jordans, and are of excellent quality. Prices for this variety will, of course, depend on those of other producing markets, while the prices for Jordans will be held up, if possible, by the growers in view of their having sold all of their last year's crop at high prices.

LONDON ALMOND PRICES.

The following table gives the average prices per 112 lbs. ex warehouse at which almonds were sold on the London market during 1919, 1920 and 1921:

(Not Shelled)

Varieties.	1919.	1920.	1921.
	Cents per lb.	Cents per lb.	Cents per lb.
Iviza.....	17.8	9.2-10.5	8.6
Tarragona.....	17.8	12.3	11.2
Faro.....	25.7	13.9	12.9

(Shelled)

Varieties.	1919.	1920.	1921.
	Cents per lb.	Cents per lb.	Cents per lb.
Morocco, (bitter).....	15.8 - 19.8	6.1 - 13.1	9.0 - 12.5
Morocco, (sweet).....	28.2 - 44.5	13.1 - 25.4	17.2 - 24.1
Palma Girgenti.....	33.6 - 44.5	16.4 - 29.4	20.6 - 28.2
Majorca (selected).....	36.7 - 49.4	19.6 - 29.4	24.1 - 28.4
Bari	31.6 - 43.5	21.3 - 28.6	18.9 - 26.6

(Shelled)

Varieties.	December, 1919.	December, 1920.	December, 1921.
	Cents per lb.	Cents per lb.	Cents per lb.
Jordan Almonds.....	63.2 - 67.2	52.3 - 58.9	56.7 - 60.1
Valencia	56.3 - 61.2	34.4 - 39.3	34.4 - 38.7
Sweet Mogadors	Not quoted	25.8	19.8
P. G. (Sicily).....	45.4	26.2	24.9
Catanias	47.4	22.9	23.2
Faro	44.5	Not quoted	24.9
Morocco Bitters .....	.....	11.1	9.8
Majorca Farmers .....	.....	25.8	24.1

Note: The average value of the shilling for 1919 was 22.12% cents; 1920, 18.32135 cents; 1921, 19.24528 cents.

TRADE STATISTICS FOR THE UNITED KINGDOM.

The following statistics taken from the official publication entitled "Trade and Commerce of the United Kingdom" gives the imports and exports of almonds by that country during 1913, 1919, 1920 and 1921.

ALMOND IMPORTS OF THE UNITED KINGDOM.

Imported from -	1913.	1919.	1920.
	Lbs.	Lbs.	Lbs.
France	552,944	1,256,080	321,104
Portugal	1,427,664	1,613,360	1,136,592
Spain	7,494,480	12,180,000	10,333,120
Canary Islands.....	586,544	1,158,640	189,728
Italy	2,224,544	5,531,120	6,554,688
Turkey, Asiatic.....	93,856	22,064	17,584
Morocco	4,191,264	3,779,440	3,377,696
Other foreign countries..	1,079,232	106,176	252,448
Total from foreign countries.....	17,650,528	25,646,880	22,184,960
Total from British Possessions.....	22,736	41,104	77,840
GRAND TOTAL.....	17,673,264	25,687,984	22,262,800

ALMOND EXPORTS OF UNITED KINGDOM.

Exported to	1913.	1919.	1920.
	Lbs.	Lbs.	Lbs.
Russia	28,112	38,192	33,376
Sweden	51,632	69,776	211,792
Denmark (including Faroe Islands).....	43,120	94,640	154,448
Germany.....	2,626,176	165,984	353,584
Netherlands	92,400	127,232	71,792
Belgium	72,688	240,688	93,632
United States of America.....	846,160	127,456	54,880
Other foreign countries..	49,280	21,952	94,752
Total for foreign countries.....	3,809,568	885,920	1,068,256
Union of South Africa.....	139,888	40,544	100,128
British India.....	77,952	49,840	28,672
Australia	54,432	95,424	104,160
New Zealand.....	57,456	185,360	326,368
Canada	232,064	121,520	105,728
Other British Possessions	72,016	25,424	47,040
BRAND TOTAL	4,443,376	1,404,032	1,780,352

TRADE STATISTICS FOR THE UNITED STATES.

The following figures compiled by the United States Department of Commerce gives the imports of shelled and unshelled almonds into the United States, by countries, for the calendar years 1913, 1918, 1919, 1920 and 1921:

Unshelled.					
Countries.	1913.	1918.	1919.	1920.	1921.
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.
Finland.....	---	---	---	---	44,092
France	826,529	66,138	1,162,119	983,622	546,233
Germany	5	---	---	---	---
Greece.....	10,508	11,000	817,595	148,324	410
Italy	477,760	154,022	816,895	930,775	285,227
Netherlands.....	---	---	---	---	4,630
Portugal.....	---	29,574	84,366	7,593	1,322
Spain.....	1,232,684	5,866,200	5,388,370	4,574,391	3,498,293
Turkey in Europe.....	1,764	---	---	7,915	---
England.....	35,010	284	---	2,240	---
Canada.....	---	---	13,610	50	---
Mexico.....	400	---	---	---	---
China.....	2,688	438	5,780	---	10
Hongkong.....	13	400	3,798	6,314	3,918
Palestine in Syria.....	---	---	---	---	111,672
Persia.....	---	---	5	---	---
Turkey in Asia.....	4,826	---	---	6,521	7,122
Australia.....	---	---	---	24,413	---
Canary Islands	---	21,318	---	---	---
French Africa.....	---	---	---	11,033	1,342
TOTAL.....	2,592,187	6,149,374	7,482,538	6,703,181	4,402,271

Shelled.					
Countries	1913	1913	1919	1920	1921
	Pounds	Pounds	Pounds	Pounds	Pounds
Azores and Madeira Islands:	---	20,902	6,720	---	21,500
France.....	1,137,903	351,948	278,194	276,707	372,360
Greece.....	2,513	50,046	1,766	74,972	53,578
Italy	5,949,728	11,434,914	7,949,952	8,616,098	6,650,090
Malta, Gozo, and Cyprus Is.	---	---	---	---	100
Netherlands.....	3,803	---	---	---	---
Portugal	11,424	431,175	478,425	131,556	406,534
Spain.....	5,624,578	8,968,603	18,790,139	8,305,139	13,036,558
Turkey in Europe :	86,976	---	---	---	11,023
England.....	51,943	33,246	7,392	52,483	40,864
Scotland.....	560	---	---	---	---
Canada.....	7,501	4,172	9,576	11,201	12,378
Mexico.....	---	---	---	850	---
Cuba.....	---	549	---	---	---
Argentina.....	---	---	---	---	68,355
Chile.....	---	---	362	---	224
Colombia.....	---	---	42,000	14,000	---
Venezuela.....	---	22,400	---	---	---
China.....	5,709	15,230	6,016	531	246
Greece in Asia...	---	---	---	---	12,904
Hongkong.....	11,949	5,202	26,133	59,451	39,409
Japan.....	---	20	---	---	228
Persia.....	16,690	---	---	---	---
Turkey in Asia ..	117,411	---	1,800	24,803	14,125
Canary Islands...	---	136,352	33,583	10,913	6,925
French Africa.....	---	---	41,967	428	176
Morocco.....	---	19,993	333,157	71,546	128,866
TOTAL.....	13,078,771	21,544,757	28,007,908	18,150,678	20,873,872

TRADE STATISTICS FOR FRANCE.

The following statistics taken from "Du Commerce et de la Navigation" and from "Tableau General du Commerce de la France," give the imports and exports of almonds for France during the calendar years 1913, 1918 and 1919:

IMPORTS OF ALMONDS INTO FRANCE.

Years ending December 31, 1913, 1918 and 1919			
Imported from-	1913	1918	1919
	Pounds	Pounds	Pounds
Spain.....	358,467	557,984	56,438
Algeria.....	967,378	183,863	167,103
Tunis	6,173	---	2,205
Other Countries	13,448	---	---
TOTAL.....	1,345,466	741,847	225,752

ALMONDS AND HAZELNUTS.

(Shelled - dried)			
Imported from-	1913	1918	1919
	Pounds	Pounds	Pounds
Portugal.....	---	---	205,485
Spain.....	2,834,013	578,708	1,352,329
Italy.....	1,911,168	4,978,578	5,580,945
Greece.....	---	---	28,600
Turkey.....	1,710,770	---	510,144
Algeria.....	347,004	8,818	67,240
Morocco.....	370,373	925,050	2,713,422
Colonies.....	---	---	24,471
Tunis.....	12,566	65,036	---
Other Countries.....	315,699	78,484	52,469
TOTAL.....	7,501,593	6,629,674	10,536,665

ALMONDS AND HAZELNUTS.

(Unshelled - dried)			
Imported from-	1913	1918	1919
	Pounds	Pounds	Pounds
Portugal.....	70,327	818,788	852,078
Spain.....	1,422,408	1,589,737	2,189,168
Italy.....	1,230,167	19,400,260	14,794,189
Turkey.....	78,925	---	276,677

ALMONDS AND HAZELNUTS (CONT'D.)

Unshelled (dried)			
Imported from -	1913	1918	1919
	Pounds	Pounds	Pounds
Algeria.....	95,239	33,510	236,994
Tunis.....	14,109	1,815,488	513,672
Morocco.....	---	---	79,586
Other countries...	162,038	42,990	153,661
TOTAL	3,073,213	23,700,773	19,096,025

EXPORTS OF ALMONDS FROM FRANCE.

Years ending December 31, 1913, 1918 and 1919.

Almonds (Fresh)			
Exported to --	1913	1918	1919
	Pounds	Pounds	Pounds
Germany.....	26,676	---	34,833
Belgium.....	24,251	---	18,078
Switzerland.....	10,141	---	---
Colonies.....	661	---	---
Great Britain.....	---	20,282	14,550
St. Thomas.....	---	441	---
Ship Stores.....	---	441	---
Other countries....	3,527	---	6,393
TOTAL.....	65,256	21,164	73,854

ALMONDS AND HAZELNUTS.

Shelled (dried)			
Exported to -	1913	1918	1919
	Pounds	Pounds	Pounds
Netherlands.....	2,646	---	---
Italy.....	8,157	---	6,393
Germany.....	2,205	---	155,645
Great Britain.....	11,243	7,055	152,779
Belgium.....	882	20,723	99,648
Switzerland.....	16,534	1,102	41,446
United States.....	18,519	220	441
Algeria.....	44,312	39,462	36,596
Tunis.....	661	221	220
Other colonies and	---	---	---
Protectorates.....	3,748	---	3,748
Indo-China.....	---	3,527	---
Other countries.....	23,589	1,764	16,094
TOTAL.....	132,496	74,074	513,010

ALMONDS AND HAZELNUTS

(not shelled (dried))

Exported to	1913	1918	1919
	Pounds	Pounds	Pounds
Russia.....	3,748	---	---
Norway.....	1,764	---	---
Austria-Hungary...	7,275	---	---
Great Britain.....	93,475	132,541	164,904
Belgium.....	---	26,896	796,963
Switzerland.....	65,256	1,543	313,274
Greece.....	---	6,614	---
Egypt.....	26,455	1,102	---
Morocco.....	---	6,173	---
United States.....	372,577	99,207	1,690,923
Ship stores.....	41,607	13,960	---
Algeria.....	284,834	285,275	323,414
Tunis.....	16,534	---	281,527
Senegal.....	---	11,905	---
Indo-China.....	26,676	7,716	---
Other colonies and Protectorates...	70,768	4,409	53,572
Sweden.....	6,834	---	234,349
Germany.....	101,412	---	2,140,005
Italy.....	212,523	---	678,135
British India.....	275,795	---	1,247,142
Other countries...	145,283	8,377	611,336
TOTAL.....	1,752,876	660,718	8,535,549

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